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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,819	04/19/2001	Akihiro Isomura	TNG-3-US	7427

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EXAMINER

TAKAOKA, DEAN O

ART UNIT PAPER NUMBER

2817

DATE MAILED: 07/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/807,819

Applicant(s)

HWANG ET AL.

Examiner

Dean O Takaoka

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 22 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14, 16-21, 23-26, 28-35, 37 and 38 is/are allowed.
- 6) ☒ Claim(s) 27, 36 and 39-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 20 March 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 27 and 40 is rejected under 35 U.S.C. 102(b) as being anticipated by Ishitobi (Japan Patent No. 09-148810).

Claims 39, 41, 46 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishitobi (Japan Patent No. 09-148810) reasons of record with respect to claim 26 and contained in the previous office action dated November 18, 2002 (paper no. 19).

Claims 27 and 40:

Ishitobi teaches where a coupling amount of the three resonant modes of the dielectric block is varied by changing the dimensions of the first and second plane (0011; where Ishitobi teaches that the resonant modes cannot exist if all sides, lying at right angles are equal in length with respect to Figs. 1-3, but where two or more modes may exist when the right angle sides are beveled such as shown by Figs. 4-8, thus affecting the coupling; the coupling formula given in 0012 with respect to phase and antiphase modes; where the three resonant modes are disclosed in 0013).

Claim 39:

Claim 39 is rejected for reasons of record with respect to claim 26 and contained in the previous office action.

Claim 41:

Claim 41 is rejected for reasons of record with respect to claim 28 and contained in the previous office action; where the dielectric filter, contained in the preamble of newly added claim 41, is shown by Ishitobi (Fig. 11).

Claim 46:

Claim 46 is rejected for reasons of record with respect to claims 28 and 33 and contained in the previous office action; where the dielectric filter, contained in the preamble of newly added claim 46, is shown by Ishitobi (Fig. 11).

Claim 47:

Claim 47 is rejected for reasons of record with respect to claims 28, 33 and 34 and contained in the previous office action; where the dielectric filter, contained in the preamble of newly added claim 47, is shown by Ishitobi (Fig. 11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 42, 43, 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishitobi for reasons of record contained in the previous office action dated November 18, 2002 (paper no. 19).

Claim 42:

Claim 42 is rejected for reasons of rejection with respect to claims 28 and 29 contained in the previous office action; where the dielectric filter, contained in the preamble of newly added claim 42, is shown by Ishitobi (Fig. 11).

Claim 43:

Claim 43 is rejected for reasons of rejection with respect to claims 28 and 29 contained in the previous office action; where the dielectric filter, contained in the preamble of newly added claim 43, is shown by Ishitobi (Fig. 11).

Claims 54 and 55:

Claims 54 and 55 are rejected for reasons of record with respect to claims 28 and 33 and contained in the previous office action; where the dielectric filter, contained in the preamble of newly added claims 54 and 55, is shown by Ishitobi (Fig. 11).

Claims 44, 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishitobi in view of Ando et al. (U.S. Patent No. 5,796,318) for reasons of record contained in the previous office action dated November 18, 2002 (paper no. 19).

Claims 44, 50 and 51:

Claims 44, 50 and 51 are rejected for reasons of rejection with respect to claims 28 and 31 contained in the previous office action; where the dielectric filter, contained in the preamble of newly added claims 44, 50 and 51, is shown by Ishitobi (Fig. 11).

Claims 45, 52 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishitobi and Ando et al. as applied to claim 41 above, and further in view of Hattori et al. (U.S. Patent No. 5,764,115) for reasons of record contained in the previous office action dated November 18, 2002 (paper no. 19).

Claims 45, 52 and 53:

Claims 45, 52 and 53 is rejected for reasons of rejection with respect to claims 28 and 32 contained in the previous office action; where the dielectric filter, contained in the preamble of newly added claims 45, 52 and 53, is shown by Ishitobi (Fig. 11).

Claims 48, 56 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishitobi in view of Etienne et al. (U.S. Patent No. 4,578,655).

Claims 48, 56 and 57:

Ishitobi teaches the dielectric filter, discussed in the reasons for rejection in the previous office action dated November 18, 2002 (paper no. 19) with respect to claims 28 and 29 but does not show a first metal rod inserted between the two dielectric resonators and a second metal rod inserted near at least one dielectric resonator, a length of the second metal rod providing an adjustment for a resonant frequency of each of the three resonant modes, the length of the second rod additionally providing an adjustment for an amount of coupling between the three resonant modes.

Etienne et al. (Fig. 1) shows a similar dielectric filter resonator comprising first and second metal rods (8) inserted between resonators (3) with the length of the second metal rod providing an adjustment for a resonant frequency of each of the

resonant mode (col. 3, lines 26 – 32; where the coupling between resonators 3 of the TE mode are tuned by screw 8, further where the passband, e.g. bandwidth frequency, is affected by the coupling tuning, thus the frequency also adjusting the frequency), the length of the second rod additionally providing an adjustment for an amount of coupling between the resonant mode.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the dielectric filter disclosed by Ishitobi with the tuning screws disclosed by Etienne et al. Such a modification would have realized the advantageous benefit of providing adjustable coupling (col. 3, lines 30,31 – Etienne et al.) thus suggesting the obviousness of the modification.

Claims 49, 58, 59, 62 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishitobi in view of Tang et al. (U.S. Patent No. 4,675,630), prior art supplied by the Applicant and Fiedziuszo (U.S. Patent No. 4,780,691).

Claims 49, 58, 59, 62 and 63:

Ishitobi shows a multi-mode dielectric filter (Fig. 11), the reasons for rejection discussed in the previous office action dated November 18, 2002 (paper no. 19) with respect to claims 28, 29, 30, 33 and 34 but does not show a support member for each of the dielectric resonator, the support member comprised of a material having a low dielectric constant.

Tang et al. shows a similar multi-mode dielectric filter (i.e. Fig. 5) comprising a support member for each of the dielectric resonator (support member 14 and 46), the

support member comprised of a material having a low dielectric constant (col. 3, lines 51-52 and col. 4, lines 22-24) and where Fiedziuszko (Fig. 1) shows a single resonator (2) mounted on a low dielectric constant support (4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the dielectric filter disclosed by Ishitobi with the low dielectric constant support member for each of the dielectric resonator disclosed by Tang et al. and Fiedziuszko. Such a modification would have realized the advantageous benefit of maximizing the Q factor (col. 3, lines 28-30 – Fiedziuszko; where Tang et al. is silent with respect to the motivation) thus suggesting the obviousness of the modification.

Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishitobi and Ando et al. as applied to claim 44 above, and further in view of Tang et al. (U.S. Patent No. 4,675,630), prior art supplied by the Applicant and Fiedziuszko (U.S. Patent No. 4,780,691).

Claim 60:

Ishitobi and Ando et al. teach the multi-mode dielectric filter, discussed in the reasons for rejection in the previous office action dated November 18, 2002 (paper no. 19) with respect to claims 28 and 31 but do not show a support member for each of the dielectric resonator, the support member comprised of a material having a low dielectric constant.

Tang et al. shows a similar multi-mode dielectric filter (i.e. Fig. 5) comprising a support member for each of the dielectric resonator (support member 14 and 46), the support member comprised of a material having a low dielectric constant (col. 3, lines 51-52 and col. 4, lines 22-24) and where Fiedziuszko (Fig. 1) shows a single resonator (2) mounted on a low dielectric constant support (4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the dielectric filter disclosed by Ishitobi and Ando et al. with the low dielectric constant support member for each of the dielectric resonator disclosed by Tang et al. and Fiedziuszko. Such a modification would have realized the advantageous benefit of maximizing the Q factor (col. 3, lines 28-30 – Fiedziuszko; where Tang et al. is silent with respect to the motivation) thus suggesting the obviousness of the modification.

Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishitobi Ando et al. and Hattori et al. as applied to claim 45 above, and further in view of Tang et al. (U.S. Patent No. 4,675,630), prior art supplied by the Applicant and Fiedziuszko (U.S. Patent No. 4,780,691).

Claim 61:

Ishitobi, Ando et al. and Hattori et al. teach the multi-mode dielectric filter discussed in the reasons for rejection of the previous office action dated November 18, 2002 (paper no. 19) with respect to claims 28 and 32 but do not show a support

member for each of the dielectric resonator, the support member comprised of a material having a low dielectric constant.

Tang et al. shows a similar multi-mode dielectric filter (i.e. Fig. 5) comprising a support member for each of the dielectric resonator (support member 14 and 46), the support member comprised of a material having a low dielectric constant (col. 3, lines 51-52 and col. 4, lines 22-24) and where Fiedziuszko (Fig. 1) shows a single resonator (2) mounted on a low dielectric constant support (4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the dielectric filter disclosed by Ishitobi, Ando et al., and Hattori et al. with the low dielectric constant support member for each of the dielectric resonator disclosed by Tang et al. and Fiedziuszko. Such a modification would have realized the advantageous benefit of maximizing the Q factor (col. 3, lines 28-30 – Fiedziuszko; where Tang et al. is silent with respect to the motivation) thus suggesting the obviousness of the modification.

Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishitobi and Etienne et al. as applied to claim 48 above, and further in view of Tang et al. (U.S. Patent No. 4,675,630), prior art supplied by the Applicant and Fiedziuszko (U.S. Patent No. 4,780,691).

Claim 64:

Ishitobi and Etienne et al. teach the multi-mode dielectric filter, discussed in the reasons for rejection of claim 48 above but do not show a support member for each of

the dielectric resonator, the support member comprised of a material having a low dielectric constant.

Tang et al. shows a similar multi-mode dielectric filter (i.e. Fig. 5) comprising a support member for each of the dielectric resonator (support member 14 and 46), the support member comprised of a material having a low dielectric constant (col. 3, lines 51-52 and col. 4, lines 22-24) and where Fiedziuszko (Fig. 1) shows a single resonator (2) mounted on a low dielectric constant support (4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the dielectric filter disclosed by Ishitobi and Etienne et al. with the low dielectric constant support member for each of the dielectric resonator disclosed by Tang et al. and Fiedziuszko. Such a modification would have realized the advantageous benefit of maximizing the Q factor (col. 3, lines 28-30 – Fiedziuszko; where Tang et al. is silent with respect to the motivation) thus suggesting the obviousness of the modification.

Response to Arguments

Drawing objection contained in the previous office action dated November 18, 2002 (paper no.19) has been withdrawn in view of the Applicant's amended drawings dated March 20, 2003 (paper no. 21).

Applicant's arguments with respect to claims 1 – 36 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claims 1 – 14, 16 – 21, 23 – 26, 28 – 35, 37 and 38 are allowed.

Ishitobi does not show a first chamfered edge parallel to the y-axis or a second chamfered ridge parallel to the z-axis (claims 1, 26, 28 and 37); where the block has three planes formed by chamfering three ridge portions, three chamfered ridges not being parallel to each other (claims 6, 8 and 9);

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wakino et al. – shows coupling screws.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O Takaoka whose telephone number is (703) 305-6242. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

dot
July 11, 2003



Robert Pascal
Supervising Patent Examiner
Technology Center 2